1/2 040 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--EXPERIMENTAL STUDY OF ISOTHERMAL TURBULENT FLOW IN A RECTANGULAR CHANNEL WITH BLOWING ON ONE SIDE -U-

AUTHOR-(03)-PALEYEV, I.I., AGAFONOVA, F.A., DYMANT, L.N.

COUNTRY OF INFO--USSR

SOURCE--MINSK, IZVESTIYA VYSSHIKH UCHEBNYKH ZAVEDENIY, ENERGETIKA (NEW OF HIGHER EDUCATIONAL INSTITUTIONS, ENERGETICS), 1970, NO 1, PP 65-70

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--FLOW PROFILE, TURBULENT FLOW, FLOW VELOCITY, ENERGY SPECTRUM, WAVE NUMBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0550 STEP NO--UR/0143/70/000/001/0065/0070

CIRC ACCESSION NO--AT0052021

UNCLASSIFIED

USSR UDC 621.391.17

SVIRIDENKO, S.S., AGAFONOV, YU.S.

"Minimization Of Signal Search Time In Discrete Communication System"

Elektrosvyaz', No 9, Sept 1972, pp 61-63

Abstract: The paper considers a search for a discrete pseudorandom (noise-like) signal in a space of indeterminate parameters with respect to frequency and time in a synchronized communication channel. The problem of optimization of search by a multichannel receiver with a multistage procedure is solved by the method of dynamic programing. A comparison with respect to efficiency is made of search systems with various numbers of channels and stages. The values are obtained of the gain in the average signal search time in the frequency-time plane by a multi-channel two- and three-stage correlation receiver relative to a single channel receiver with one search stage. The dependence is found of the rate of removal of indeterminancy in the state of the signal on the complexity (cost) of the receiver carrying out the search. It is shown that it is advisable to characterize the quality of operation of the search system by an efficiency equal to the ratio of the rate of removal of indeterminancy to the cost with a fixed probability of correct detection. 2 fig. 1 tab. 7 ref. Received by editors, 6 Feb 1971.

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USSR

UDC 620.193.2

MIKHAYLOVSKIY, YU. N., SHUVAKHINA, L. A., KLARK, G. B., and AGAFONOV, V. V., Academy of Sciences USSR, Institute of Physical Chemistry

"Method of Studying the Influence of Climatic Parameters on the Rate of Atmosphere Corrosion of Metals"

Moscow, Zashchita Metallov, Vol 7, No 2, Mar-Apr 71, pp 154-158

Abstract: A method is suggested allowing continuous recording of the rate of atmospheric corrosion of metals. The method is based on measurement of the electrical resistance of a thin layer of the metal (vacuum condensate or thin foil) during the process of corrosion. The design of sensors for the method is described and illustrated.

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USSR

UDC 620.193.2

MIKHAYLOVSKIY, YU. N., SHUVAKHINA, L. A., KLARK, G. B., and AGAFONOV, V. V., Academy of Sciences USSR, Institute of Physical Chemistry

"Method of Studying the Influence of Climatic Parameters on the Rate of Atmosphere Corrosion of Metals"

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Abstract: A method is suggested allowing continuous recording of the rate of atmospheric corrosion of metals. The method is based on measurement of the electrical resistance of a thin layer of the metal (vacuum condensate or thin foil) during the process of corrosion. The design of sensors for the method is described and illustrated.

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USSR

MIKHAYLOVSKIY, Yu. N. et al., Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 264-269

known meteorological characteristics were also used. The specimens and instrumentation were exposed in an open area and in a louvered enclosure where phase layers of moisture settled on the metal surface due to precipitation, dew, and drop condensation. In the open atmosphere, the specimens and sensors were exposed on stands turned toward the south at an angle of 45° to the horizontal. In the louvered booths, the specimens were held vertically. An analysis of the results of the corrosion sensors shows that in spite of the complex influence of temperature, aluminum corrosion can be calculated with respect to averaged quantities, yielding satisfactory agreement with natural tests. The average rate of aluminum corrosion under "clean" atmospheric conditions is nearly independent of the nature of the moisture film, which is typical of metals which retain their passive state under atmospheric conditions. Corrosion parameters were determined which are necessary for calculating the rate of corrosion of aluminum and its alloys in any climatic zone from meteorological data.

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USSR

UDC: 620.193.:669.717

MIKHAYLOVSKIY, Yu. N., KLARK, G. B., SHUVAKHINA, L. A., AGAFONOV, V. V., ZHURAVLEVA, N. I., Institute of Physical Chemistry, Academy of Sciences of the USSR

"Calculating the Rate of Atmospheric Corrosion of Aluminum and its Alloys in Different Climatic Zones With Respect to Meteorological Parameters"

Moscow, Zashchita Metallov, Vol 9, No 3, May/Jun 73, pp 268-270

Abstract: The purpose of the paper was to study the influence of meteorological parameters (humidity and air temperature, time of saturation of the metal surface by phase layers of moisture, chemical composition of the atmosphere) on the rate of corrosion of aluminum and its alloys under natural conditions, and to develop engineering methods of calculating the corrosion effects to be expected on these materials in any climatic zone. The research procedure is described in a previous paper (Yu. N. Mikhaylovskiy et al., Zashchita Metallov, 1971, Vol 7, p 154). The specimens were aluminum and alloys D16T, AMG-6 and 01915. The studies were done in rural and industrial regions in the central zone, and in the coastal regions of the North and South. The results of previous tests in tropical zone wit

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USSR

AGAFONOV, V. P., Eksperim. issled. i vopr. modelir. techeniy razrezhen. gaza i plazmy, Novosibirsk, 1971, pp 71-77

the notion of a thin shock layer and the use of the inger solution for the concentration of atoms on the body surface. Calculations of the thermal flow based on the proposed formula show that nonequilibrium processes in the gas and on the surface of the body cause a decrease in the maximum value of the thermal flow of approximately 50%. P. P. Vorotnikov.

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USSR

UDC 536.24:532.526

AGAFONOV, V. P.

"Analytical Determination of Heat Flow at the Critical Point Considering the Nonuniformity of Flow and Vortex Interaction"

V sb. Eksperim. issled. i vopr. modelir. techeniy razrezhen. gaza i plazmy (Experimental Studies and Problems of Modeling Flows of Rarefied Gas and Plasma -- Collection of Works), Novosibirsk, 1971, pp 71-77 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B854)

Translation: In hypersonic flights ($V_\infty \geq 4$ km/sec) at high altitudes $H > 50$ km, relaxation processes connected with excitation of internal degrees of freedom (vibrations, dissociation, etc.) begin due to the high temperatures behind the strong shock headwave in the gas. In addition the vorticity in the layer of nonviscous gas becomes considerable and this is caused by the curvilinear character of the compression shock. A simple formula is derived considering these phenomena to evaluate the magnitude of the nonuniform thermal flow at the critical point in terms of the flight velocity, the thermodynamic and transitional properties of the unperturbed gas, the blunting radius, the temperature and the degree of catalyticity of the body surface. The theory is based on a chemical model of the air as a binary mixture of atoms and molecules,

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USSR UDC 616.931.45:-084.47

AGAFONOV, V. I., BARKIN, Ye. I., VDOVIN, D. G., VOROBEYCHIKOV, V. N., VOROB'YEV, A. A., GANESHKO, Kh. P., GAPOCHKO, K. G., GEFEN, N. Ye., YEVSTIGNEYEV, V. I., YEMEL'YANOVA, O. V., ZEMSKOV, Ye. M., IMANALIYEV, O. G., KATALOV, I. I., KVIRIKADZE, V. V., KUTYREV, P. A., MISHKOV, O. P., PUSHKAREV, V. P., and ROZDESTVENSKIY, D. A., Military Medical Academy imeni S. M. Kirov, Leningrad

"A Comparative Efficiency Characteristic of Different Immunization Methods Against Plague Infection"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 11, 1972, pp 106-112

Abstract: Analysis of the available literature data led to the conclusion that oral, aerogenic, and jet immunization methods are the most efficient compared with subcutaneous and skin methods. The average number of patients inoculated against plague infection was 517, 817 (419), and 937 per hr for jet injectors, aerogenic method liquid and dry vaccine, and oral method (tablets), respectively, compared with only 43 and 28 for the subcutaneous and skin methods, respectively.

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USSR

AGAFONOV, V. I., et al, Voyenno-Meditsinskiy Zhurnal, No 9, Sep 71, pp 46-49

disease was acute, and fever of 39-41°C lasted 3-15 days. Renal and cardiovascular insufficiency developed in five patients. The clinical picture was atypical, suggesting both HFRS and leptospirosis. After test for Leptospira proved negative in all patients, two types of tests for hemorrhagic fever antigens were performed: indirect hemagglutination inhibition and agglutination with fluorescent antibodies. In the indirect hemagglutination tests, sheep erythrocytes sensitized with antibodies against the 10-10 strain of hemorrhagic nephrosonephritis (HNN) were used. All tests were positive. The fluorescence tests yielded green granular fluorescence in spleen smears. It is concluded that the green granular fluorescence is specific for HNN, and that the granules represent areas of replication of the HNN virus.

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UDC 616.61-002.151-02

USSR

AGAFONOV, V. I., Maj Gen Med Serv, Docent; LEV, M. I., Col Med Serv; NOSKOV, F. S., Lt Col Med Serv, Candidate of Medical Sciences; KONIKOVA, R. Ye., Candidate of Medical Sciences; GAVRILYUK, YELIGULASHVILI, R. K., Candidate of Biological Sciences; B. K., Doctor of Medical Sciences; KULIKOV, I. A., Lt Col Med Serv; YEFIMOV, L. S., Lt Col Med Serv; SERGEYCHIK, I. I., Capt Med Serv; BELYAYEVA, H. S.

"Etiological Decoding of an Outbreak of Hemorrhagic Fever With a Renal Syndrome"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 9, Sep 71, pp 46-49

Abstract: In June and July 1970, in the southern area of Khabarovskiy Kray, an outbreak of hemorrhagic fever with a renal syndrome (HFRS) occurred among workers employed on construction work and housed in a tent camp located on a hill surrounded by swampy meadows. Despite repeated rodent extermination, the camp area was infested with rodents and ticks. Relocation of the workers to a nearby village halted the outbreak. Only one of the 34 hospitalized workers died. The onset of the

USSR

SIMAKOV, Yu. G., et al., Arkhiv Anatomii, Gistologii i Embriologii, Vol 64, No 3, Mar 73, pp 5-12

abnormal cleavage with the lysis of some blastomers. There were no signs of implantation on the 6th day. On the 12-13th day of the action of the additional gravitational force, the mice were no longer pregnant, because their uterus was thinned out as in mice in a state of diestrus. Under the effect of the gravitational overload, gestation was interrupted already in the preimplantation stage.

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USSR

UDC 591.32:531.5

SIMAKOV, Yu. G., AGAFONOV, V. A., VOLKOVA, O. V., ROMANOVA, Ye. A., and SHITOV, G. D., Chair of Histology and Embryology, Pediatric Faculty, Second Moscow State Medical Institute imeni N. I. Pirogov, Moscow

"Pre-Implantation Development of Mouse Embryos Under Conditions of Changed Gravitation"

Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, Vol 64, No 3, Mar 73, pp 5-12

Abstract: Female mice were placed 11-13 hrs after mating into a centrifuge in which an additional gravitational force of 1 G was exerted on them in the dorso-ventral direction. Under the conditions of increased gravitation, a delayed appearance of fetuses transferred from the oviducts into the horns of the uterus was not observed. Morphological changes in the development of the fetuses began to be apparent on the 4th day of pregnancy; they comprised retarded development and disturbances in cleavage. These changes coincided with the beginning of a drop in the content of bound lipids and a rise in the content of PAS-positive substances in the endometrium. At the time of implantation, after 4 days of the action of gravitational overload, the majority of fetuses were unable to penetrate into the muscosa of the uterus, because the blastocytes had not lost their zone pellucida or had undergone

USSR

AGAFONOV, S. A., Vestn. Mosk. Un-ta. Mat., Mekh., 1972, No 4, pp 87-90.

system with potential energy

$$U = \frac{1}{2} c \sum_{k=1}^{n} x_k^2, \; c > 0$$

becomes unstable when radial correction forces are attached. 6. If the system is under the influence of dissipative, gyroscopic forces and radial correction forces with matrix $||\alpha g_{kj}||$, $\alpha > 0$, where $||g_{kj}||$ is the matrix of gyroscopic forces, it will be stable (or with an even number of degrees of freedom -- asymptotically stable) where $b_k > \alpha$, $(k = 1, \ldots, n)$, where b_k are the dissipation factors. If $b_1 = b_2 = \ldots = b_m = \alpha$, a $b_{m+1} > \alpha$, $\ldots$, $b_n > \alpha$, the system will be stable in relationship to $x_{m+1}, \ldots, x_n, x_{m+1}, \ldots, x_n$. If the system has an even number of degrees of freedom and $0 < b_k < \alpha$ $(k = 1, \ldots, n)$, the system will be unstable. Where $b_k \leq 0$ $(k = 1, \ldots, n)$, the system is unstable. 6 Biblio. Refs.

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USSR

AGAFONOV, S. A.

"The Stability of Nonconservative Systems"

Vestn. Mosk. Un-ta. Mat., Mekh. [Moscow University Herald, Mathematics, Mechanics], 1972, No 4, pp 87-90, (Translated from Referativnyy Zhurnal, Mekhanika, No 10, 1972, Abstract No 10 A85, by the author).

Translation: The stability of the position of equilibrium of a holonomic material system acted upon by potential, gyroscopic, dissipative and radial correction forces is studied. The following results are produced. 1. If the potential energy has an isolated maximum and gyroscopic forces are not in effect, the system cannot be stabilized by attachment of dissipative forces and radial correction forces. The instability of the system is retained without dissipative forces. 2. If only dissipative forces and radial correction forces act on the system, with an even number of degrees of freedom the system is unstable. 3. The instability of a system on which only radial corrective forces act is proven. 4. If the potential energy of the system has an isolated maximum and dissipative forces are not in effect, the system cannot be stabilized by attachment of gyroscopic forces and radial correction forces with the matrix $||\alpha g_{kj}||$, $\alpha > 0$, where $||g_{kj}||$ is the matrix of gyroscopic forces. 5. A stable conservative

USSR UDC: 621.397(088.8)

TITKOV, B. V., ALEKSANDROV, V. V., AGAFONOV, M. I.

"A Television Correlator"

USSR Author's Certificate No 249430, filed 7 May 68, published 30 Dec 69 (from RZh-Radiotekhnika, No 7, Jul 70, Abstract No 7G88 P)

Translation: A patent has been granted for a TV correlator which contains a TV camera with single-line scanning whose output is connected to one of the inputs of a multiplier, an integrator and a terminal registration unit. To improve precision and automate measurements of one-dimensional correlation functions, connected to the second input of the above-mentioned multiplier is an additional TV camera with single-line scanning before which is placed an optical axis separation module which displaces the image on the target of the auxiliary TV camera and actuates a micrometer screw connected to an electromechanical drive which is tied to the synchro generator of the transmitting cameras.

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2/2 013 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0053284

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MASS SPECTRUM OF TICL SUB4 IS TABULATED. THE ISOTOPIC COMPN. OF TICL SUB4 IS GIVEN.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--MASS SPECTRUM OF TITANIUM TETRACHLORIDE -U-

AUTHOR-(03)-AGAFONOV, I.L., ZUYEVA, M.V., RACHKOV, V.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(2) 574-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ISOTOPE, CHEMICAL COMPOSITION, TITANIUM CHLORIDE, MASS SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/0299 STEP NO--UR/0078/70/015/002/0574/0576

CIRC ACCESSION NO--AP0053284

UNCLASSIFIED

USSR

UDC 621.315.592

AGAFONOV, B. G., et al., Fizika i Teknika Poluprovodnikov, Vol 6, No 5, 1972, pp 909-914

a) the current connected with absorption with the participation of polar optical phonons, b) the current connected with absorption in the presence of acoustic phonons and c) the current connected with absorption in the presence of admixture centers. The current connected with light absorption in the optical phonon section is predominate in the sample with the concentration $n = 1.6 \cdot 10^{16} cm^{-3}$. The theoretical and experimental curves (considering absorption) are also presented for a concentration of $1.8 \cdot 10^{17} cm^{-3}$. In this case the "cold" electron current can be neglected and the absorption coefficient with the participation of charged impurities can be considered independent of temperature. For this concentration the "admixture" drag current must become comparable with the "optical" current, and the rise of the theoretical curves with a decrease in temperature is connected with both of these currents.

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USSR

UDC 621.315.592

AGAFONOV, B. G., VALOV, P. M., RYVKIN, B. S., YAROSHETSKIY, I. D., Physico-technical Institute imeni A. S. Ioffe of the USSR Academy of Sciences, Leningrad

"Photon Drag of Electrons in the Presence of Intraband Light Absorption by Free Current Carriers in $A^{III}B^{V}$ Semiconductors"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 909-914

Abstract: A study was previously made of the drag effect as applied to IV type semiconductors where the scattering of the carriers is determined by acoustic, nonpolar optical phonons and ionized impurity centers [A. M. Danishevskiy, et al., ZhETF, No 58, 544, 1970; A. A. Grinberg, ZhETF, No 58, 989, 1970]. Now an experimental and theoretical study has been made of the photon drag of electrons in $A^{III}B^{V}$ semiconductors where the scattering of the carriers on the polar optical phonons is the defining factor. The effect was recorded by means of a CO_2 laser (λ = 10.6 microns) using n-type InAs of various concentrations. A drag current caused by intraband transitions was detected experimentally. In accordance with the theoretical analysis, the electrons were dragged by the light. The corresponding temperature functions are presented for an electron concentration of $n = 1.6 \cdot 10^{16} cm^{-3}$ with consideration of three currents:

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2/2 042 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0109972

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIO SUB2 ADDED TO A COMOD SJ64-AL SUB2 O SUB3 CATALYST INCREASED ITS CRACKING AND ISOMERIZATION ABILITY, PRODUCING AN INCREASE IN THE CONVERSION AND IN THE RATIO OF ISO TO N HYDROCARBONS IN THE GASEOUS AND LIQ. PRODUCTS. THE MECH. STRENGTH OF THE CATALYST WITH ADDED SIO SUB2 INCREASED BY 50PERCENT; ITS PORE VOL. AND AV. PORE RADIUS ALSO INCREASED. THE DIESEL FRACTION OBTAINED WITH SUCH A CATALYST HAD A LOWER POUR POINT. THE CATALYST CONTG. 20PERCENT SIO SUB2 LOST ITS HYDRODESULFURIZATION ACTIVITY MORE RAPIDLY THAN THAT CONTG. 10PERCENT SIO SUB2.

ZZZZZZZZZZZZ UNCLASSIFIED

1/2 042 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--EFFECT OF SILICON DIOXIDE CONTENT ON THE PHYSICOMECHANICAL AND CATALYTIC PROPERTIES OF HYDROCRACKING CATALYSTS -U-

AUTHOR--ROGOV, S.P., PEREZHIGINA, I.YA., AGAFONOV, A.V., SEMENOVA, YE.S., LIKHOVA, Z.V.

COUNTRY OF INFO--USSR

A

SOURCE--KHIM. TEKHNOL. TOPL. MASEL 1970, 15(3), 8-11

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--OXIDE CATALYST, ALUMINUM OXIDE, COBALT, MOLYBDENUM, SILICON DIOXIDE, MECHANICAL STRENGTH, PETROLEUM DESULFURIZATION, ISOMERIZATION, PETROLEUM HYDROCRACKING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/2040 STEP NO--UR/0065/70/015/003/0003/0011

CIRC ACCESSION NO--AP0109972

ZZZZZZZZZZZZ UNCLASSIFIED

2/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133783

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROFINED DISTILATES, AFTER PHENOL REFINING, GAVE OILS WITH LOWER S CONTENT AND HIGHER VISCOSITY INDEX (94-7), YIELDING 1.1-4.4PERCENT ADDNL. REFINED OILS WITH HIGHER CONTENTS OF PARAFFINIC NAPHTHENIC HYDROCARBONS AND LESS HEAVY AROMATICS AND RESINS THAN THOSE OBTAINED WITHOUT HYDROFINING. DISTILLATES HYDROFINED ON NI-MO-ZEOLITE YIELDED REFINED OILS WITH HIGHER VISCOSITY INDEXES THAN THOSE HYDROFINED ON NI-MO-AL SUB2 O SUB3. FACILITY: MOSK. INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--HYDROFINING OF OIL FRACTIONS, MEANS FOR IMPROVING THE QUALITY OF LUBRICATING OILS -U-

AUTHOR-(04)-BEKAYEV, R.B., ROGOV, S.P., CHERNOZHUKOV, N.I., AGAFONOV, A.V.

A

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (4), 24-6

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ZEOLITE, LUBRICATING OIL, PETROLEUM REFINING PROCESS, HYDROREFINING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1939 STEP NO--UR/0318/70/000/004/0024/0026

CIRC ACCESSION NO--AP0133783

UNCLASSIFIED

USSR

OSIPOV, L. N., et al, Khimiya i Tekhnologiya Topliv i Masel, No 2, 1971, pp 1-3

modification of the design requiring merely a 50-100 percent increase in the loading volume of the alumina-cobalt-molybdenum catalyst.

USSR

UDC 665.534

OSIPOV, L. N., KHAVKIN, V. A., AGAFONOV, A. V., ROGOV, S. P., RYSAKOV, M. V., and PEREZHIGINA, I. Ya., All Union Scientific Research Institute of the Petroleum Industry

"Hydrofining of Sulfur-Containing Secondary Gasolines to Obtain Stock for Catalytic Reforming"

Moscow, Khimiya i Tekhnologiya Topliv i Masel, No 2, 1971, pp 1-3

Abstract: The article describes results of experiments on the hydrofining of thermal-cracked and TCC gasolines, as well as mixtures of these gasolines with straight-run gasoline for the purpose of obtaining stock for catalytic reforming. The experiments were carried out on an apparatus with alumina-cobalt-molybdenum catalyst loading of 0.5 l, a total pressure of 35 at, a temperature of 350-425°C, space velocity 0.5-5.0 hr^{-1}, gas circulation 300 l/l stock. The object of the experiments was to obtain a product containing not more than 0.003 percent sulfur by weight or 0.0002 percent nitrogen by weight, with an iodine number no greater than 1 g I_2/100 g. The results indicate that these gasolines can be successfully improved on existing blocks or units for the preliminary hydrofining of straight-run gasoline L-24-300 following a slight

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2/2 013 PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133805

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE DISTILLATE, HIGH [illegible] AND BITUMINOUS ASPHALTIC COMPDS., WAS HYDROCRACKED IN 1 STEP AT [illegible] 425DEGREES, AND 1 L. STOCK-L. CATALYST-HR, YIELDING A HEAVY FRACTION [illegible] LARGER THAN 350DEGREES, WITH S 0.06, N 0.03, AND COKE 0.1PERCENT, WHICH WAS VACUUM DISTD. TO OBTAIN FRACTIONS WHICH WERE DEWAXED AND HYDROFINED TO YIELD LOW VISCOSITY AND AUTOMOBILE OILS. THE LATTER HAD VISCOSITY INDEX 100 AND 0.03PERCENT S.

UNCLASSIFIED

1/2 013

TITLE--PRODUCTION OF OILS BY HYDROCRACKING A VACUUM DISTILLATE OF ARLANSKII PETROLEUM -U-

AUTHOR-(05)-LIPOVSKAYA, K.S., GOLDSHTEYN, D.L., ROGOV, S.P., PEREZHIL'SKAYA, I.YA., AGAFONOV, A.V.

COUNTRY OF INFO--USSR

SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 45

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--LUBRICATING OIL, PETROLEUM HYDROCRACKING, PETROLEUM DEPOSIT, CHEMICAL COMPOSITION, PETROLEUM DEWAXING, VACUUM DISTILLATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1961

STEP NO--UR/0318/70/000/005/0045/0045

CIRC ACCESSION NO--AP0133805

UNCLASSIFIED

USSR

UDC 543.51+547.27

AGADZHANYAN, Ts. Ye., GRIGORYAN, R. T., Institute of Fine Organic Chemistry, Academy of Science Armenian SSR, Yerevan

"Mass Spectra of Biologically Active Compounds. III. Mass Spectrometric Study of Simple Dialkylaminoethers"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol XXIV, No 2, 1971, pp 113-116

Abstract: The mass spectrometric study of biologically active compounds is continued. A series of amino alcohols with a tertiary amino group and their complex ethers were studied previously [A. L. Mndzhoyan, et al., Arm. Khim. Zh., 22, 779, 1969; 22, 883, 1969], and now biologically active compounds containing functional groupings in various positions of the molecule along with the tertiary amino group are studied by fragmentation of simple dialkylaminoethanol ethers. The mass spectra were taken on a mass spectrometer equipped with a system permitting evaporation of the substance directly in the ion source near the ionization zone with recording on a rapid-scan oscillograph. The results in the form of relative percentages of the maximum peak are presented in the form of figures. These figures specifically demonstrate the possibility of distinguishing isomeric diethylaminoethyl ethers from isomeric dimethylaminoethyl ethers and isomeric propyl ethers from each other. The fragmentation mechanisms are discused in detail for each of these cases. Dimedrol fragmentation is also demonstrated.

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USSR UDC 542.91+547.466+547.964.4

ACADZHANYAN, Ts. Ye., AMBOYAN, K. L., GARIBDZHANYAN, B. T., and CHACHOYAN, A. A., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Acad. Sc. ArmenianSSR, (Yerevan)

"Biologically Active Polymers. I. Synthesis of Polypeptides Containing Cytotoxic Groups"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 25, No 11, 1972, pp 956-962

Abstract: Polypeptides of glycine, sarcosine, DL-norleucine, DL-leucine, L-phenylalanine, L- and D-valine were synthesized, connected to the ethylenimine, N,N-bis-(2-chloroethyl)-p-phenylenediamine or to the ethyl ester of sarcolysine by an amide linkage. Derivatives of polypeptides were obtained in anhydrous dioxane by polymerization of N-carboxy anhydrides of the corresponding aminoacids in presence of the above mentioned amines. The structure of the polymers has been confirmed by means of infrared and ultraviolet spectra. It was shown that some of the products exhibited antitumor activity on Walker carcinosarcoma and Ehrich ascitis tumor.

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USSR

UDC 542.91+547.466+547.964.4

AGDZHANYAN, T. YE., AMBOYAN, L. K., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences of the ArmSSR, Yerevan

"Biologically Active Polymers. II. bis-(2-Chloroethyl)amides and N,N-bis-(2-Chloroethyl)hydrazides of Polypeptides"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 26, No 2, 1973, pp 135-140

Abstract: Polypeptides of various α-amino acids containing bis-(2-chloroethyl)amine or N,N,-bis-(2-chloroethyl)hydrazine radicals on the C-end were synthesized to investigate their tumor-controlling properties. The polypeptide derivatives were synthesized by polymerizing the N-carboxyanhydrides of the corresponding amino acids in the presence of these amines. Polymerization of N-carboxyanhydrides of sarcosine, DL-alanine and L- and D-valine in the presence of bis-(2-chloroethylamine) is accompanied by amide-ester regrouping. A previously unreported hydrazide-ester rearrangement was observed when N-carboxyanhydrides of sarcosine and DL-alanine were polymerized in the presence of N,N-bis(2-chloroethyl)hydrazine.

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USSR

AGADZHANYAN, N. A., et al., Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 74, No 10, 1972, pp 11-15

the cardiovascular activity. A decrease in the pO_2 in the thigh muscle of the deafferentated rats was more noticeable under severe hypoxia. When animals spent 30 min at 5000 m elevation (pO_2 = 85 mm Hg), the number of respirations increased during the first 10 min and was high during the entire exposition time, but was lower in deafferentated rats. There were no significant differences in the reactions of the cardiovascular and thermore[illegible] systems at this elevation. A complete evaluation of the [illegible] in pO_2 pressure in the thigh muscles of the deafferentated rats at [illegible] elevation (barochamber) with low oxygen concentration. [illegible] rats died within [illegible] and 68 seconds, respectively at [illegible] m elevation. No significant changes in the ventilation system were observed [illegible] of rats placed in chambers with 11% oxygen for 30 [illegible]. It is [illegible] that the peripheral chemoreceptors play a definite role in a [illegible] adaptation of the animal organism to oxygen deficiency. At the same time, the [illegible] chemoreceptors do not play any significant role in [illegible] of the cardio-vascular and thermoregulatory systems in response to hypoxia. Since the synocarotid deafferentation did not produce significant changes in the [illegible] ventilation in response to hypoxia it can be assumed that other [illegible] systems, yet unknown, take part in this process.

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APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900036-6

USSR

UDC 616.273.2:612.329

AGADZHANYAN, N. A., BRESLAV, I. S., KONZA, E. A., USAKOVA, N. A., and YELFIMOV, A. I., Institute of Physiology imeni I. P. Pavlov, Academy of Sciences USSR, Leningrad

"The Role of Peripheral Chemoreceptors in Reactions of Rats Subjected to Short-Term and Prolonged Hypoxia"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 74, No 10, 1972, pp 11-15

Abstract: The role of the deafferentated synocarotid and aortic reflexogenic zones on respiratory, cardiovascular, and thermoregulatory activities of rats subjected to hypoxia was studied. The ventilation in intact rats breathing with the air containing 11% (PO_2 83.6 mm Hg), increased by 20.3% compared with the normal air respiration. No noticeable changes were observed on rats with deafferentated synocarotids on both sides and breathing with the same hypoxia mixture. The same was true for rats with deafferentated aortic zone. A rapid elevation (25 m/sec) of intact rats to 7000 m produced a rapid breathing. The same was observed in deafferentated rats but it occurred much later and was 15-20% lower than in intact rats. The number of heart beats in both groups of animals increased, without any significant difference between them. The severe hypoxia at 7000 m inhibited sharply both the respiration and

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2/2 036 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0115111

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPERIMENTAL INVESTIGATION OF THE BEHAVIOR OF THE HIGH ALTITUDE TOLERANCE OF WHITE RATS AS A FUNCTION OF THE EXPOSURE TIME TO A HYPERCAPNIC MEDIUM. THE ANIMALS WERE KEPT FOR 7 DAYS IN A CHAMBER CONTAINING 6 PER CENT CARBON DIOXIDE (NORMAL OXIGEN CONTENT) AT ATMOSPHERIC PRESSURE, A TEMPERATURE OF 25 DEG C, AND A RELATIVE HUMIDITY OF 89 PER CENT. ACUTE HYPOXIA TOLERANCE WAS STUDIED IN AN ALTITUDE CHAMBER (12,000 M AT AN ASCENT VELOCITY OF 25 M-SEC). THE RESULTS INDICATE THAT TOLERANCE TO ACUTE HYPOXIA INCREASES AFTER EXPOSURE TO A HYPERCAPNIC MEDIUM FOR A PERIOD OF ONE DAY, BUT DECREASED APPRECIABLY AFTER AN EXPOSURE TIME OF 7 DAYS. FACILITY: INSTITUT MEDIKO-BIOLOGICHESKIKH PROBLEM, MOSCOW, USSR.

UNCLASSIFIED

1/2 036 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--ACUTE HYPOXIA TOLERANCE AFTER VARIOUS EXPOSURE TIMES IN MEDIUM WITH A HIGH CARBON DIOXIDE CONTENT -U-

AUTHOR-(02)-ACADZHANYAN, N.A., SERGIYENKO, R.V.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK SSSR, DOKLADY, VO. 191, MAR. 11, 1970, P. 487-489

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SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--HYPOXIA, WHITE RAT, CARBON DIOXIDE, ALTITUDE ADAPTATION, ALTITUDE CHAMBER, HYPERCAPNIA

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1092 STEP NO--UR/0020/70/191/000/0487/0489

CIRC ACCESSION NO--AT0115111

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USSR

AGADZHANYAN, N. A. and USAKOVA, N. A., Doklady Akademii Nauk SSSR, Vol 198, No 1, 1971, pp 236-239

possibly other peripheral and central receptors can partly but not completely compensate for the carotid sinus chemoreceptors, and that the carotid sinus chemoreceptors exert no effects on cardiovascular and temperature-regulating centers.

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USSR

AGADZHANYAN, N. A., et al., Zhurnal Vysshey Nervnoy Deyatel'nosti, No 1, 1971, pp 176-183

gradually decreased, the beta oscillations disappeared, and the delta rhythms became dominant. Mental performance (in arithmetic problems) deteriorated, memory declined, and when oxygen saturation of the blood was 65% or less unconsciousness ensued, although several vital systems (respiratory, cardiac) continued to function. The results of the experiments suggest that EEG shifts can serve as an indicator of mental impairment under conditions of increasing oxygen insufficiency.

USSR UDC 576.2+591.1/.4

AGADZHANYAN, N. A. and USAKOVA, N. A., Institute of Medical and Biological Problems, Moscow

"The Effect of Acute Hypoxia on the Organism of Animals with "Denervated" Carotid Sinus Zones"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 1, 1971, pp 236-239

Abstract: To investigate a possible correlation between shifts taking place in respiration and those occurring in other functional systems during hypoxia, tests were performed on male rats in a barochamber in which air pressure was reduced, to a simulated altitude of 12 km. Out of a total of 27 rats, 11 had bilaterally "denervated" carotid sinus chemoreceptors. The "denervation" was performed under nembutal anesthesia through treatment of both carotid bifurcations with 10% phenol. Control animals were subjected to identical surgery; however, no phenol was applied. The following parameters were measured: respiratory

USSR

RAFIKOV, A. M. and AGADZHANYAN, N. A., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 60-62

of prednisolone in the morning had no effect on resistance to acute hypoxia because of the maximum content of endogenous corticosteroids at this time.

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Physiology

USSR UDC 616.45-001/.3-056"52"

RAFIKOV, A. M. and AGADZHANYAN, N. A.

"Circadian Fluctuations in Resistance to Stress"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 1, 1971, pp 60-62

Abstract: Rats were stressed by exposing them in a pressure chamber to a simulated altitude of 12,000 m at the rate of 25 or 2 m/sec. The rats' resistance to acute hypoxia exhibited distinct diurnal variations, i.e., it was highest in the morning and lowest late in the evening. Intraperitoneal injection of animals with prednisolone (15 mg/kg) in the morning had no effect on their resistance to the simulated high altitude, but such injections late in the evening increased the rats' survival time, especially when pressure was increased at the rate of 25 m/sec. These findings are linked to the diurnal variations in the corticosteroid hormone level in the animals' blood, which is highest in the morning and lowest at night. Administration

Physiology

USSR UDC 612.273

AGAIZHANYAN, N. A., and SHEVCHENKO, Yu. V., Institute of Medical-Biological Problems, USSR Academy of Sciences, Leningrad

"Correlation of Various Functional Shifts During Intensifying Hypoxia in Intact and Anesthetized Animals"

Moscow, Doklady Akademii Nauk SSSR, Vol 198, No 2, 1971, pp 471-474

Abstract: Respiratory rate, pulse rate, rectal temperature, and relative oxygen concentration in muscle tissue were measured in 286 white mice kept in a 25-liter barochamber with a simulated altitude of 12,000 m, achieved at a rate of 25 m/sec. Graphs of the results indicate that there are two phases of adaptive changes taking place during the simulated ascent. In the first phase, oxygen concentration in muscle tissue decreases rapidly, body temperature is maintained, and respiratory and pulse rates rise to a precipitous peak at a simulated altitude of about 3,000 m. In the second phase, oxygen concentration in muscle tissue decreases at a slower rate but soon reaches critical values, body temperature falls, and a second sharp peak in respiratory and pulse rates occurs at a simulated altitude of about 7,000 m. It was concluded that activation of the carotid sinus and aortic arch chemoreceptors with redistribution of blood from nonvital to vital organs is the main regulatory mechanism in the first phase, while cerebral hypoxia is the governing factor in the second phase of acute hypoxic hypoxia.

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USSR

AGADZHANYAN, N. A., et al., Sovetskoye Zdravookhraneniye Kirgizii, No 6, 1971, pp 8-13

altitude tolerance of the rabbits and rats decreased after denervation of the sinocarotid chemoreceptors, it increased in the marmots. The dynamics of changes in the RBC, prothrombin time, fibrinogen concentration, and other hematological indexes showed the same pattern. For example, the number of RBC and hemoglobin content increased considerably in the glomectomized rabbits (more than in the intact animals) but decreased in the marmots. Thus, the sinocarotid chemoreceptors play a significant role in the process of adaptation to high altitudes.

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USSR UDC 612.143+612.275.1

AGADZHANYAN, N. A., ISABAYEVA, V. A., BEBINOV, YE. M., and YELFIMOV, A. I.

"Role of the Arterial Chemoreceptors in Adaptation to High Altitudes"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 6, 1971, pp 8-13

Abstract: Experiments were performed on intact and denervated rabbits and rats imported from Moscow (sea level) and marmots at an altitude of 3,200 m to study the part played by the sinocarotid zone in adaptation to a mountain climate. The criterion of acclimatization was the "survival time" at an altitude of 12,000 m (elevation in a pressure chamber at a velocity of 25 m/sec). Tolerance for high altitude did not increase in the intact and denervated rats until after 30 days of acclimatization. The "survival time" at the "altitude" of 12,000 m was significantly longer in the intact rats than in the animals with excised sinocarotid glomera. The results were essentially the same in the experiments with the rabbits. But in the experiments with the marmots, the "survival time" of the intact animals at 12,000 m was 780 sec compared with 1,280 sec for the glomectomized animals. High altitude tolerance was therefore greater in marmots than in the animals living at sea level (rabbits, rats) and a glomectomy caused opposite changes. Whereas high

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USSR

AGADZHANYAN, N. A., et al., Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 22, No 1, Jan/Feb 72, pp 37-45

training in the pressure chamber secured the necessary physiological shifts, which were expressed in a more effective use of oxygen. This prevented severe disruption of motor reflexes and facilitated the readjustment of rats to high altitude conditions. In animals devoid of sinocarotid receptor zones, the adaptation to severe hypoxia was very slow (3 rats died at 5,000 m during the first two days, and others perished at 10,000 m). This indicates the importance of chemoreceptors in the compensatory-adaptive reactions of the animal organism.

USSR UDC 612.821.6

AGADZHANYAN, N. A., DORONIN, G. P., and YELFIMOV, A. I.

"The Effect of Pressure Chamber Training on Chain Motor Conditioned Reflexes in Rats"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, Vol 22, No 1, Jan/Feb 72, pp 37-45

Abstract: Experimental rats were subjected to training in the pressure chamber at a simulated altitude of 5,000 m. Rats were kept in the chamber for 1.5 to 4 hr/day for 10 days. Before and after the chamber training, the animals were exposed to a simulated altitude of 10,000 m and in some cases to 12,540 m. One group of rats was conditionally trained to get food by a combination of reflexes. Glomectomy was performed on another group of rats before training in the pressure chamber. The third group was trained at 3,200 m altitude in Tuya-Asha mountains, and their survival was checked exposing them step-wise to a 12,000 m simulated altitude at a rate of 25 m/sec. In the case of untrained animals in the first group, severe and prolonged disturbances in conditioned food reflexes were observed, starting with the 5,000 m altitude. A complete inhibition of these reflexes was observed at 7,000-8,000 m altitude. Adaptation to hypoxia in the course of 10-day

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AGADZHANYAN, N., Sovetskaya Rossiya, 22 Sep 72, p 3

while in interplanetary flight there may be no change of day and night at all. Whether in space or on another planet every life conditions which the space man encounters is abnormal. It has been found that on the short space trips so far undertaken, a piece of earthly biological life and routine must be taken along, organized into a normal 24 hour cycle. The most work activity should be conducted at the time of highest physiological activity, while at hours when, for example, the heart is less capable (1 p.m. and 11 p.m.), no special burdens should be imposed on it. An aural and intellectual "menu" must also be prepared to prevent depression of higher branches of the CNS, with for example music in a major key for periods of exertion and in a minor key for rest. Food should also be regulated -- as it should be on earth. The biomedical problems of interplanetary travel are significantly more complex, but some answers to them as well are to be sought in researching biological rhythms. Not only space travel benefits by this research, for it seems that certain illnesses are caused by the violation of biological rhythms.

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USSR

AGADZHANYAN, N., Professor, Doctor of Medical Sciences

"Space: the Rhythms of Life"

Moscow, Sovetskaya Rossiya, 22 Sep 72, p 3

Abstract: Despite the pessimism of the American professor Hulton in 1935, it has been shown that space flight is in no way contradictory to man's nature. All earthly beings have regulated themselves in relation to the earth's rotation, to day and night and their corresponding changes in heat, light and moisture. These plus social factors such as work and rest cause changes in assimilation and dissimilation in living cells which must be considered in space flight. Only labor is capable of preserving man's capabilities in space; the physiology of space labor is the cornerstone of space biology andmedicine. Science has data which indicate that the human organism is in an acid phase from 3 a.m. to 3 p.m. and in an alkaline phase from 3 p.m. to 3 a.m. each day. It is common knowledge that a man is at his weakest mentally and physically from 2 a.m. to 4 a.m. The maximum level of physiological activity is from noon to 6 p.m., the minimum from 2 a.m. to 5 a.m. The basic "timer" of living nature, the sun, does not fulfill its function during space travel. In orbiting, every orbit has a night and day,
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AGADZHANYAN, N., Meditsina i Kosmos, "Znaniye," 1971, 32 pp

oxygen, cosmic radiation, and so on would be eliminated. The problem of storing large supplies of water, oxygen, and food aboard the spaceship would also be eliminated, an especially important consideration on long flights.

The third and final group of factors considered in the monograph are the factors which characterize the physical state of cosmic space -- vacuum, absence of molecular oxygen, ionizing radiation (cosmic, ultraviolet, and corpuscular), meteors, sharp variations in temperature, and so on.

A short section on the profession of cosmonaut, noting the requirements and dangers involved and the kind of mental and physical qualities that a cosmonaut needs, appears at the end of the monograph.

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AGADZHANYAN, N., Meditsina i Kosmos, "Znaniye," 1971, 32 pp

information which their brains receive is decreased, a situation which can have many bad effects. One solution is to see that the cosmonauts' activities are accompanied by such ordinary terrestrial stimuli as light, speech, music, and so on. Another possibility is to organize the cosmonauts' work in such a way as to alleviate their deficit of current information: permanent radio contact with earth, the use of illuminators and television screens for observation purposes, conducting scientific experiments, and servicing and maintaining equipment. Among these stimuli, music, which is a special type of human information, plays an important role.

As spaceflights become longer and longer, the study of biological rhythms acquires special importance. It is a well-known fact that jet passengers on east-west or west-east flights often suffer a disruption of their internal biological clock. This problem also arises on spaceflights.

Scientists are seriously studying the possibility of transporting living organisms through space in a state of artificial hibernation. If it were possible to regenerate the vital functions of the human organism after lowering the body temperature to 10°C, many problems connected with the protection of the organism from acceleration, sharp fluctuations in temperature, insufficient

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AGADZHANYAN, N., Meditsina i Kosmos, "Znaniye," 1971, 32 pp

The conditions of life in a hermetically sealed cabin of limited size are comprised of many factors: barometric pressure; gaseous, chemical, and ionic composition of the atmosphere; temperature, moisture, and rate of movement of the air; level of ionizing radiation and magnetic field, lighting conditions and illumination; noise level; accomodation of the crew and provision of water, food, clothing, and so forth for them.

Of these factors, the most important is maintenance of the proper atmosphere. So far, there is no ideal atmosphere which would satisfy all the requirements of the activity and safety of the crew under all circumstances. It would seen as if the atmosphere of the earth's surface would be most acceptable, but it is the least favorable during explosive decompression, and especially when the cosmonauts leave the ship and work in open space. At present, the best solution seems to be a separate decision for each spaceflight, determining the composition of cabin air as a function of the conditions and duration of the flight and the tasks and work programs of the crew. As regards future development of a more or less standardized "space" atmosphere, an atmosphere similar to that of high-altitude regions may be very promising.

Another important factor in manned spaceflights is prolonged isolation. Cosmonauts are deprived of many ordinary sensations, and the quantity of

USSR

AGADZHANYAN, N., Doctor of Medical Sciences

Moscow, Meditsina i Kosmos (Medicine and Space), "Znaniye," 1971, 32 pp

Abstract: The main part of the monograph is devoted to a discussion of the basic medical and biological problems of spaceflight. The factors which could affect living organisms during spaceflight are divided into three groups and each group is analyzed.

The first group consists of factors associated with the dynamics of the vessel itself -- noise, vibration, acceleration, and weightlessness. Only the last two are exclusively problems of spaceflight. Acceleration disrupts vision, breathing, and blood circulation, but hearing is practically unaffected until the point of unconsciousness. As for weightlessness, cosmonauts can quickly adjust to it, work effectively, and readjust to terrestrial conditions after landing, but there are still many difficulties involved and many physiological shifts which need to be studied further. One approach to the problem is to design spaceships with artificial gravity.

The second group consists of factors associated with living under the artificial conditions of a spaceship cabin -- the microclimate of the cabin, prolonged isolation, changes in the 24-hour cycle, biological compatibility of the crew, and so on.

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SMIGAYLO, Ye., Meditsinskaya Gazeta, 20 Aug 71, p 3

involving one problem of national concern, nine problems in the USSR Ministry of Health plan, and 6 subjects in the Kirgiz SSR economic plan.

The Directives of the 24th CPSU Congress state that improvement of environmental health conditions is a major problem. Therefore, one of the first areas of scientific study in the Ninth Five-Year Plan will be to determine possible carcinogenic effects of various chemicals used in the [illegible] industry, agriculture, and other sectors of the national economy, and to develop [illegible] for the treatment of malignant tumors. [illegible] will also be taken to prevent occupational diseases among workers at tobacco planta- tions.

Work conditions at sheep breeding points, enterprises for the [illegible] processing of wool, and carding and fulling [illegible] in Frunze are a main focus of [illegible] attention.

Extensive industrial growth, and the development of new regions in our nation are planned during the Ninth Five-Year Plan. In particular, mountain regions will be widely developed. The second area of scientific research, therefore, will involve determination of optimal high mountain regions with regard to human activity, and de- termination of the therapeutic-prophylactic effects of high mountain adaptation for a
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SMIGAYLO, Ye., Meditsinskaya Gazeta, 20 Aug 71, p 3

number of cardiovascular and blood diseases. The Kirgiz Medical Institute and a number of national and republic scientific research institutes will participate in an integrated approach to the problems of high mountain physiology and pathology.

It is also planned to continue research on distribution patterns of mineral waters in Kirgiziya and to determine the possibilities of using them for treatment [illegible]. Studies will be made of [illegible] in the [illegible] and high altitude mountain spas, and scientifically [illegible] methods will be developed for treatment hypertonic diseases, [illegible], chronic [illegible] arthritis, radiculitis, and chronic gynecological diseases, with consideration given to specific conditions at spas.

During 1971-1975 it is planned to increase the efficiency of immunization against tuberculosis, develop methods of determining the resistance of tuberculosis bacilli to antibiotics, determine the types and non-typical forms of bacilli, and improve the methods of functional and clinical diagnosis of this disease.

Scientific research and medical institutes are preparing to perform these tasks, but little attention is being given to the systematization of this work. This problem is now on the agenda of the day.
6/7

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900036-6

AGADZHANYAN, N.

MEN...

USSR

SETGAYLO, Ye., Meditsinskaya Gazeta, 20 Aug 71, p 3

hedge nettle, SOsk, colchicine prednisolone ointment, and the anticoagulant Ln.

Biolakt, a new product widely used in childrens' institutions in and outside the republic is one of the most important advances in childrens' nutrition.

Most of Kirgizia consists of high mountains. High mountain physiology and pathology are therefore one of the main study fields pursued by scientific institutes and some chairs at the medical institute. The following organizations are participating in the study of these problems: the Institute of Physiology [illegible] of the [illegible] ment of the USSR Academy of Sciences, the [illegible] and [illegible] of the USSR Academy of Sciences [illegible], the Institute of Normal and Pathological Physiology of the USSR Academy of Medical Sciences, and others.

At the Kirgiz Medical Institute, problems of high mountain physiology are studied within the framework of the International Biological Program.

Information has now been accumulated on the functioning of the circulatory and respiratory systems of individuals who are permanent inhabitants of areas with elevations from 760 to 4,200 meters above sea level. Physiological reactions during
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SETGAYLO, Ye., Meditsinskaya Gazeta 20 Aug 71, p 3

short-term stays in high mountain areas are also being studied.

[illegible] has recently begun and is continuing in the use of adaptation to high mountain areas for [illegible] physiological [illegible]. Studies are being made of the course and treatment of ordinary diseases in high mountain areas and of diseases caused by mountain climate.

The number of publications is a partial indication of institute scientific activities. In the past five years [illegible] and 11 monographs have been written [illegible]. They include the monographs by [illegible] and [illegible] "On the Classification of Shock" and "Essay on Shock [illegible]," [illegible] a classification of shock suggested by the authors is included in the GREAT MEDICAL ENCYCLOPEDIA, and the latter monograph has been awarded a prize by the Kirgiz Council of Ministers. Other publications include "The Cardiovascular System in High Mountain Areas" by M. Mirrakhimov, "Mountains and the Organism's Resistance" by M. Mirrakhimov and N. Agadzhanyan, "[illegible]," by [illegible], and "Underground Mineral Waters of the Kirgiz SSR" by a group of authors.

During 1971-1975 scientific research institutes and the Central Scientific Research and Problem Laboratories of the Medical Institute plan to work on 32 subjects
4/7

2/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135362

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALKYLPHENOL (93.8 PARTS) AND 6.2 PARTS P SUB2 S SUB5 REACTED AT LESS THAN OR EQUAL TO 130DEGREES AND 1.33 KG PER HR PER L. REACTION VOL. TO GIVE 97PERCENT PRODUCT, WHICH WAS TREATED WITH ZNO AND BA(OH) SUB2 TO OBTAIN THE ADDITIVES VNII NP-354 AND 350, RESP., WHICH, MIXED IN RATIO 2:5, GAVE THE ADDITIVE VNII NP-360.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--PHOTOSULFONIZATION O,O DISALKYLPHENYL PHOSPHORODITHIOATE PRODUCTION IN CONTINUOUS PILOT APPARATUS -U-

AUTHOR-(05)-GASUZADEVA, I.M., ZEYNALOVA, G.A., PULATOVA, SH..., NAMAZOV, I.I., AGASZHANOV, KH.S.

COUNTRY OF INFO--USSR

SOURCE--AZERB. NEFT. KHOZ. 1970, (3), 35-7

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--LUBRICANT ADDITIVE, CHEMICAL SYNTHESIS, THIOL, PHOSPHATE ESTER, BENZENE DERIVATIVE, ZINC OXIDE, BARIUM HYDROXIDE/(U)VNIINP354 LUBRICANT ADDITIVE, (U)VNIINP350 LUBRICANT ADDITIVE, (U)VNIINP360 LUBRICANADDITIVE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3026/1797 STEP NO--UR/0487/70/000/003/0035/0037

CIRC ACCESSION NO--AP0135362

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AA0040774

AUTHORS: Agadzhanov, G. S.; Morgulis, M. L.; and Gershkovich, B. M.

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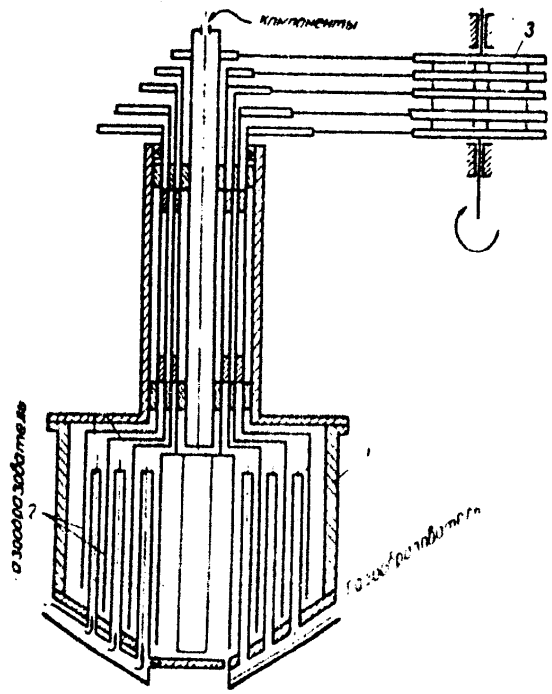
AA0040774



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19750473

AA0040774 AGADZHANOV G.S. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

242369 POLYSTYRENE BEADS PRODUCTION, in a mixer the schematic arrangement of which is shown in the diagram; the cylindrical container (1) is equipped with concentircally distributed blades (2), with the drive mechanism (3), which ensures that the differently located blades are all driven at the same linear rate of motion by the system of belt-and-pulley arrangements. There are also perforated diffusers located between the blades, through which the gas required to assist in the production of the necessary composition for the preparation of the final product is admitted. The mixer ensures that high intensity and uniformity of mixing is obtained across the entire cross-section of the mixing chamber, thus increasing productivity and the quality of the material produced.

11.8.65. as 1022289/23-5, AGADZHDANOV, G.S. and others. (2.9.69) Bul. 15/25.4.69. Class $39a^5$ Int Cl. B 29g.

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USSR UDC: 621.385:530.145.6:53

AGABEKYAN, A. S. (editor)

"Energy Transmission in Condensed Media"

Peredachu energii v kondensirovannykh sredakh. Tr. 1-go Vses. seminara po bezyzluchat. peredache energii v kondensirovan. sredakh, Lori, Armeniya, 6-12 okt. 1969 g. (cf. English above. Works of the First All-Union Seminar on Nonradiative Energy Transmission in Condensed Media, Lori, Armenia, 6-12 October 1969), Yerevan, 1970, 196 pp, ill. 75 k. (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D434 K)

Translation: At the present time, considerable attention is being given to a detailed investigation of the mechanisms of various physical processes in laser media. One of the promising methods of increasing the effectiveness of laser emission is the simultaneous introduction of two or more types of impurities into the matrix, and using the phenomenon of nonradiative energy transfer between the impurity ions. A study of this phenomenon is of considerable interest for the spectroscopy of condensed media and luminescence. The First All-Union Seminar (1969) on Energy Transmission in Condensed Media in Lori (Armenian SSR) dealt with these problems. The collection is of interest to specialists involved in solid state spectroscopy, luminescence and quantum electronics. A. K.

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2/2 016 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0122285

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SMALL OIL FLOW (0.5 M PRIME3 -DAY) WAS OBTAINED FROM THE 2993-3300 M INTERVAL FROM A HOLE DRILLED IN THE TITLE AREA. THE OIL WAS OF LOW RESIN AND LOW S PARAFFIN TYPE WITH VERY SMALL CONTENT OF ASPHALTENES AND N. ITS LOW COKING ABILITY INDICATED THE PREDOMINANCE OF PARAFFIN HYDROCARBONS. THE PETROLEUM CONTAINED ALSO LITTLE OF ACID PRODUCTS AND A SMALL AMT. OF MECH. IMPURITIES. THE GASOLINE FRACTION WAS CHARACTERIZED BY HIGH SATN. CONTENT OF PARAFFIN HYDROCARBONS WAS ON THE AV. 70PERCENT. AN INCREASE IN CONTENT OF AROMATIC HYDROCARBONS, REACHING MAX. (15.5PERCENT) IN THE 175-200DEGREES FRACTION, WAS OBSD. DURING INCREASE IN TEMP. OF BOILING. INCREASE IN CONTENT OF S WAS OBSD. SIMULTANEOUSLY WITH INCREASE IN AMT. OF AROMATIC HYDROCARBONS. THIS SUBSTANTIATED THE FACT THAT GASOLINES OF METAMORPHOSED OILS, RICH IN CH SUB4 HYDROCARBONS, CONTAIN LARGE AMT. OF AROMATIC COMPDS. THE 60-95 AND 150-75DEGREES FRACTIONS HAD THE MAX. CONTENTS OF NAPHTHENE HYDROCARBONS. FACILITY: INST. GEOL. NAUK, MINSK, USSR.

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117865

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ABILITY OF CHOLINESTERASE INHIBITED BY NORMAL AND BRANCHED HYDROCARBON RADICALS OF VARIOUS ORG. PHOSPHORYLATED INHIBITORS TO BE REACTIVATED BY THE ACTION OF 2,PYRIDINE ALDOXIME METHIODIDE WAS STUDIED. THE REACTION RATE FOR O,ALKYL,S,BUTYLMETHYLTHIOPHOSPHONATES, O,ISOALKYL,S,BUTYMETHYLTHIOPHOSPHONATES, AND O,PINACOLYL,S,BUTYLMETHYLTHIOPHOSPHONATE VARIED INVERSELY WITH THE LENGTH OF THE ALKOXYL RADICAL. THE DECREASED DEGREE OF DEACTIVATION WITH LONG ALKOXYL RADICALS IS PROBABLY DUE TO APPEARANCE OF STERIC INHIBITORS AGAINST APPROACH OF THE REACTIVATOR TO THE PHOSPHORYLATED ENZYME. FACILITY: DEP. BIOCHEM., I. LENINGRAD. STATE MED. INST., LENINGRAD, USSR.

UNCLASSIFIED

1/2 014 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--EFFECT OF THE STRUCTURE OF ORGANOPHOSPHORUS INHIBITORS ON THE RATE OF REACTIVATION OF INHIBITED CHOLINESTERASE -U-

AUTHOR-(03)-AGABEKOVA, I.I., ROZENGART, V.I., SITKEVICH, R.V.

COUNTRY OF INFO--USSR

SOURCE--BIOKHIMIYA 1970, 35(1), 53-7

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ORGANIC PHOSPHORUS COMPOUND, CHOLINESTERASE INHIBITOR, PAM ANTIDOTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0639 STEP NO--UR/0218/70/035/001/0053/0057

CIRC ACCESSION NO--AP0117865

UNCLASSIFIED

Radiation Chemistry

USSR

AGABEKOVA, I. I.

"Study of the Activity of Lysozomal Enzymes in the Rat Liver Tissue During Irradiation"

Tr. Tadzh. Med. in-ta (Proceedings of the Tadzhik Medical Institute) 1972, (1973), 27, 21-26 (from RZh-Biologicheskaya Khimiya, No 21, Nov 73, Abstract No 21F1107)

Translation: Results are reported of the study of the activity of acid phosphates and β-glucuronidase in the liver tissue of rats at various periods after general x-ray irradiation. The authors conclude that even though the enzyme activity in blood serum reflects in general the pathological process developing in the tissue after radiation damage, the value of its determination drops because of a series of factors (degree of the destruction of lysozymes, the intensity of the washout into the blood, etc).

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USSR

AGABALYAN, A. S., et al., Voprosy Virusologii, No 5, 1971, pp 527-532

resistant to heating, even to 56°C. Infectious RNA isolated either from a virus-containing suspension or from infected cells retains its activity for several weeks when stored at -20°C.

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USSR UDC 576.858.25.0.8.396.332

AGABALYAN, A. S., MEN'SHIKH, L. K., and YERSHOV, F. I., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR

"Factors That Influence the Level of Infectiousness of Venezuelan Equine Encephalomyelitis Virus RNA"

Moscow, Voprosy Virusologii, No 5, 1971, pp 527-532

Abstract: The titers of infectious VEE virus RNA are highest after the cells are treated with 1 M NaCl solution for 15 min at room temperature. DEAE dextran (2 to 3 mg/ml) and protamine sulfate (0.3 to 0.6 mg/ml) added to the agar overlay increase the number and size of the plaques formed by RNA and intensify its infectiousness. The RNA titers are highest when the nuclei acid is adsorbed on the cells for 2 to 5 min at room temperature and at 37°C. Prolonging the adsorption time markedly lowers the titers of infectiousness. Treatment with RNAase completely neutralizes the infectiousness of RNA, whereas treatment of the original virus with the same enzyme has little or no effect in this respect. Immune serum against VEE virus has no effect on plaque formation caused by RNA preparations, but it greatly reduces the infectious titers of the original virus. Infectious RNA is

1/2

USSR

UDC 576.858.25.098.396.332

AGABALYAN, A. S., URYVAYEV, L. V., and YERSHOV, F. I., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, Moscow

"Characteristics of Viral RNA of Venezuelan Equine Encephalomyelitis Virus"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 72, pp 490-494

Abstract: The physicochemical properties of viral RNA isolated from Venezuelan equine encephalomyelitis (VEE) virus were studied in comparison to those of other group A arboviruses. RNA was labeled with H^3-uridine and studied spectrophotometrically. The RNA formed a single peak in a sucrose gradient with a sedimentation constant of 38-40S. This peak was sensitive to RNA-ase, and its maximum infectivity coincided with the maximum of radioactivity. Electrophoresis of the RNA in 3.5% agarose-polycarylamide gel indicated that it was homogeneous and pure, and enabled determination of its molecular weight: $4{\cdot}0{\cdot}10^6$-$4.3{\cdot}10^6$ daltons. When fractionated in a cesium sulfate density gradient, the RNA settled in a single zone with density 1.55 gm/cm^3. These findings support previously published evidence that viral RNA is heavier than had been supposed. Differences in other properties between data on VEE virus RNA given here and previously published data on RNA of other A arboviruses are minor and can be attributed to variations in experimental procedures. Thus it is concluded that VEE virus RNA is identical in physicochemical properties to other A arboviruses.

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USSR UDC 577.1.576.858

AGABALYAN, A. S., Institute of Experimental Biology, Armenian Academy of Sciences

"Biosynthesis of Viral Nucleic Acids"

Yerevan, Biologicheskiy Zhurnal Armenii, No 5, 1973, pp 31-38

Abstract: This review of the recent literature touches on the following matters: mechanisms of replication of RNA and DNA viruses, regulation of the synthesis of viral RNA and DNA, replication of oncornaviruses, function of virion RNA polymerase, viral RNA polymerase synthesized de novo, reverse transcriptase (RNA-dependent DNA polymerase), synthesis of virus-specific RNA in cells infected with RNA viruses and their role in viral replication, and conformations of viral RNA.

USSR

MNATSAKANYAN, V. A., et al., Armyanskiy Khimicheskiy Zhurnal, Vol 26, No 4, 1973, pp 325-331

nine amines and nine amides that have been synthesized are listed in tables. Deamination of aminolupinane and aminoepilupinane in benzene with $NaNO_2$ and 50% acetic acid resulted in the formation of (-)lupinine + O-acetyllupinine and (+)epilupinine + O-acetylepilupinine, respectively. No rearrangement took place.

2/2

USSR

UDC 547.94

MNATSAKANYAN, V. A., ARUTYUNYAN, L. S., and AGABABYAN, E. YU., Institute of Fine Organic Chemistry imeni A. L. Mndzhoyan, Academy of Sciences Armenian SSR, Yerevan

"Modification of the Structure of Alkaloids. Synthesis of Amino Derivatives of Lupinane and Epilupinane"

Yerevan, Armyanskiy Khimicheskiy Zhurnal, Vol 26, No 4, 1973, pp 325-331

Abstract: With the view of continuing a study of the pharmacological properties of derivatives of lupinane and epilupinane, the diastereomeric aminomethyl- and ameinoethylquinolizidines were prepared starting from lupinine and epilupinine. The aminomethylquinolizidines aminolupinane and aminoepilupinane were prepated according to G. R. Clemo et al (J. Chem. Soc., 429, 1931), while the aminoethylquinolizidines homoaminolupinane and homoaminoepilupinane were obtained upon reduction with $LiAlH_4$ of cyanolupinane and cyanoepilupinane, respectively. The aminoalkylquinolizidines were acylated with the chlorides of acetic, homoveratric, and homopiperonic acids thereby converted into the corresponding amides. Reduction of the amides with $LiAlH_4$ resulted in the formation of amines. The physical properties of the

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USSR

AGABABOV, S. G. and EKSLER, L. I., Teplofizika Vysokikh Temperatur, Vol 9, No 3, May-Jun 71, pp 522-526

method can be employed in any case in which profilograms can be taken.

The article contains a bibliography of 13 titles.

USSR

UDC 535.231.4

AGABABOV, S. G. and EKSLER, L. I., Moscow Power Institute

"Influence of the Geometric Characteristics of the Surface Relief of a Solid on Its Radiation Properties (by Determination of the Roughness Factor). I. Theory"

Moscow, Teplofizika Vysokikh Temperatur, Vol 9, No 3, May-Jun 71, pp 522-526

Abstract: For a solid whose surface has random roughness, the authors investigate a procedure for computing the roughness factor that takes into account the influence of the surface relief on the radiation properties of the body. They suggest computing the roughness factor from the characteristics of a surface profilogram.

The authors state that the degree of blackness of a rough surface and the roughness factor are connected by an expression that is valid for thermally and optically uniform gray surfaces, with the radiation and reflection being of a diffusion nature.

The method described by the authors for computing $\bar{R}$ or F has a general character. The values of F_m obtained thereby may be used in any cases in which it is necessary to know a true surface area with random roughness. The

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2/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124781

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL COND. WAS CALCD. ACCORDING TO THE METHOD OF G. N. DUL'NEV AND YU. P. ZARICHNYAK (1966, 1967) AND CORRESPONDED TO THE EXPTL. DATA. THE METHOD WAS RECOMMENDED FOR CALCG. THE COND. OF SOLNS. OF NON REACTING LIQS., INCLUDING AQ. AND NONAQ. COMPONENTS. FACILITY: LENINGRAD. INST. TOCHNOI MEKH. OPT., LENINGRAD. USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--CALCULATION OF THE THERMAL CONDUCTIVITY OF MULTICOMPONENT SOLUTIONS OF NORMAL AND ASSOCIATED LIQUIDS -U-

AUTHOR-(03)-AGA, O.B., DULNEV, G.N., ZARICHNYAK, YU.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., NEFT GAZ 1970, 13(3), 79-82

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THERMAL CONDUCTIVITY, MULTICOMPONENT SYSTEM, SOLUTION PROPERTY, CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1126 STEP NO--UR/0152/70/013/003/0079/0082

CIRC ACCESSION NO--AP0124781

UNCLASSIFIED

USSR UDC [illegible]

ATAKULOV, B.A., AFUZOV, A.Ya., [illegible], E.I., [illegible], Kh., [illegible]

"Concerning Strain Resistivity Properties Of p-Type Films Of GeTe and PbTe"

Dokl. AN UzSSR (Proceedings Of The Academy Of Sciences, Uzbek SSR), 1972, No 2, pp 30-31 (from RZh:Elektronika i yeye primeneniye, No 7, July 1972, Abstract No 7B378)

Translation: An experimental study is made of the dependence of resistance on strain [deformatsiya] during compression and expansion, for polycrystalline films of GeTe and PbTe deposited by thermal evaporation in a vacuum of $10^{-[illegible]}$ mm of mercury on a 5 x 10 x 0.015 mm³ paper substrate. In the absence of strain, the resistivity of the GeTe and PbTe films equals, respectively, 1.4 and [illegible] ohm.cm. 6 ref. V.K.

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AFROSIMOV, V.V.

- 147 -

Acc. Nr: AP0046555 A Ref. Code: UR 0216

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, 1970, Nr 1, pp 14-24

Afrikyan, E. K.

BACTERIAL INSECTICIDES AND THEIR APPLICATION

Institute of Microbiology, Academy of Sciences Armenian SSR

The up-to-date problems of bacterial insecticides and their application are discussed.

Crystalforming bacteria from the Bac. cereus-thuringiensis group have been found in 5—10 per cent of the investigated samples of iniected insects. They were also isolated from healthy insects; their natural distribution is limited to the ecology of some serotypes in certain geographycal areas.

A new serotype named Bac. thuringiensis var. caucasicus has been isolated. The technique for obtaining of new varieties of crystalforming bacteria by the application of different methods is discussed.

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REEL/FRAME
19781818

6

A

Entomology

USSR

UDC 632.937

AFRIKYAN, E. K., Institute of Microbiology, Academy of Sciences, Armenian SSR

"Bacterial Insecticides and Their Use"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1970, pp 14-29

Abstract: The current status of bacterial insecticides is reviewed and the main groups and species of spore-forming and nonsporulating bacteria with entomopathogenic action are described. Bac. cereus, Bac. thuringiensis, Bac. popilliae, and Bac. lentimorbus are the most promising sources of insecticides. Industrial production of bacterial insecticides, methods of obtaining and using them, and the spectrum of their entomopathogenic action are reviewed. Classification of the Bac. cereus - Bac. thuringiensis group and the species-specific nature of their entomopathogenic action are treated. Cultures of crystallophores were found in 5-10 percent of all infected insects examined, and were also isolated from healthy insects. A new serotype, Bac. thuringiensis var. caucasicus was identified. A comparison of the toxic and lysogenic properties and phage-sensitivity of cultures of various crystallophores was presented.

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2/2 018 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AP0115189

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COCAINE, PYROGALLOL, APOMORPHINE, AND PHENAMINE INCREASED THE PAIN THRESHOLD IN RATS BOTH TOLERANT AND NONTOLERANT TO MORPHINE AND INCREASED MORPHINE ANALGESIC ACTION. ALPHA-METHYLDOPA INCREASED THE PAIN THRESHOLD AND STIMULATED MORPHINE ANALGESIA. IPRONIAZID WEAKENED MORPHINE ANALGESIA IN NONTOLERANT RATS AND INCREASED IT IN TOLERANT RATS. RESERPINE WEAKENED MORPHINE ANALGESIA. FACILITY: SVERDLOVSK. MED. INST. SVERDLOVSK. USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--IMPORTANCE OF CEREBRAL CATECHOL AMINES FOR THE ANALGESIC ACTION OF MORPHINE -U-

AUTHOR-(02)-VEDERNIKOV, YU.P., AFRIKANOV, I.I.

A

COUNTRY OF INFO--USSR

SOURCE--FARMAKOL. TOK. NOL. (MOSCOW) 1970, 33(2), 154-9

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CATECHOLAMINE, MORPHINE, ANALGESIC DRUG, PAIN, RAT, RESERPINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/1170 STEP NO--UR/0390/70/033/002/0154/0159

CIRC ACCESSION NO--AP0115189

UNCLASSIFIED

123. USSR

APREMOV, V. G., KOTLYAREVSKIY, A. M., and CHERNYSHEV, V. I., Psychology Faculty, Moscow State University

"On the Perception of Images Stabilized with Respect to the Retina"

Moscow, Voprosy Psikhologii, No 6, Nov-Dec 70, pp 138-142

Abstract: Many experiments have been performed to determine the behavior of images stabilized with respect to the retina. However, in many cases the effects of the optical properties of experimental apparatus have not been considered adequately. This experiment was set up to determine the effects of different focal lengths in the lens of the apparatus attached to the eye. The apparatus used located the lens 2 millimeters from the cornea, i.e., about 5.05 millimeters from the pupil. Two sets of experiments were performed, with lenses of focal length 5.5 millimeters and 13 millimeters. Calculations indicated that the largest object which could be seen with the 5.5 millimeter focal length lens would be 2 millimeters across and would have a dimension on the retina of 5.2 millimeters; for the second lens, the dimension of the image on the retina would be 7.8 millimeters. In addition, the first lens would introduce angular distortions of up to almost 4 degrees from the parallel for a 2 millimeter object, while the second lens would produce no distortion as great as a full degree.

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SD: Foreign Press Digest
31 Mar 71

USSR

APREMOV, V. G., et al., Voprosy Psikhologii, No 6, Nov-Dec 70, pp 138-142

The calculations were verified by experiments with these two lenses. Using the lens with short focal length the subjects were unable to retain the image to be fixated, and were usually unable to recover any significant portion of it once it had disappeared. With the lens of longer focal length the subjects retained an overall image quite easily; when individual components were "erased," they were easily recovered at will. In addition, the subjects felt greater stress in using the short focal length lens. These very significant differences indicate a clear necessity for both theoretical and experimental evaluation of optical systems used in studying images stabilized on the retina. With respect to focal length, a clear superiority has been demonstrated for a lens with focal length of 13 millimeters.

2/2

AFREMOV, V.G.

USSR UDC 621.371.332

AFRAYMOVICH, E. L., VUGMEYSTER, B. O., and KALIKMAN, A. D.

"Effect of Lower-Placed Ionization on the Spectral Characteristics of a Signal Reflected from Layer 2"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 8 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 8--collection of works) "Nauka," 1972, p 154 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A395)

Translation: Computations are made of the spectral characteristics of a signal reflected from the F layer as from a mirror, with the E layer taken into account. It is shown that the signal analyzed on the ground undergoes marked modulation determined by the parameters of the E layer (velocity, half-thickness, dimensions of nonuniformities). Results of the computation agree closely with the dynamic spectra of the radio signal, given in the paper, obtained from the experimental data by simultaneous observations of the signal from the E and F layers. Resume

1/1

USSR UDC 621.371.332

AFRAYMOVICH, E. L., VUGMEYSTER, B. O., and KOROLEV, V. A.

"Spectral Characteristics of the Signal Reflected Sporadically from the E Layer"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 8 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 8--collection of works) "Nauka," 1972, pp 149-153 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A396)

Translation: Results of experimental research conducted by various authors are analyzed. As a result of the analysis, fundamental characteristics of the envelope of the signal reflected from the E_s layer are derived. In particular, the relative stability of the placement of the spectral components over a period of about five minutes is established. The results are adequately explained in the framework of the radiation model of the signal reflected from large-scale heterogeneities in the ionization. One illustration, bibliography of nine.

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USSR

RODZEVICH, N. V., et al, Vestnik Mashinostroyeniya, No 1, Jan 71, pgs 28-30

nitrided surfaces be used. The notches designed to retain the end caps of tubular splined forks should be eliminated. The X-members should be strengthened by moving the oil aperture to the end of the member and increasing the radius of the fillet in the area of transition between the cylindrical portion of the pin and the central portion of the X-member.

2/2

USSR

UDC 621.842.2-585.862-183.2:620.178.311.4

RODZEVICH, N. V., Candidate of Technical Sciences, AFONSKIY, V. P., Engineer, KARDOVSKIY, V. S., Engineer, ZHUK, Ye. I., Candidate of Technical Sciences, KONONENKO, P. D., Engineer and CHAPALA, N. P., Engineer

"Strength of Heavy Drive Shafts"

Moscow, Vestnik Mashinostroyeniya, No 1, Jan 71, pages 28-30

Abstract: This article presents the results of a study of the strength of the drive shafts used in the power trains of heavy trucks and other transport equipment. The two types studied were designed for transmission of torques of 300 and 600 kgm. The weakest links in the heavy drive shafts when tested without rocking in bearings were the forks and X-members of the universal joints. Cracks arose in the drive shafts in areas where tensile stresses were concentrated (apertures, notches, welded joints, spline ends, separation of induction-annealed layers, etc.). In order to achieve equal strength of elements and increase the load-bearing capacity of heavy drive shafts, it is recommended that continuous splined forks of type 38KhMYuA steel with

2/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0103116

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LARGE GEOSTRUCTURAL AREAS AND SUBAREAS ARE SINGLED OUT WHICH ARE DISTINGUISHED IN INTENSITY AND DIRECTION OF NEOTECTONICAL MOVEMENTS. THE DISLOCATIONS WITH A BREAK IN CONTINUITY ARE OF SIGNIFICANCE AT NEOSTRUCTURE FORMATION. THE MOST INTENSIVE MOVEMENTS ARE RELATED TO PLIOCENE EARLY QUATERNARY TIME.

UNCLASSIFIED

1/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--NEOTECTONICS OF SOUTHERN PART OF SOVIET FAR EAST -U-

AUTHOR--AFONSKIY, M.N.

A

COUNTRY OF INFO--USSR

SOURCE--GEOLOGIYA I GEOFIZIKA, 1970, NR 2, PP 64-71

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--TECTONICS, STRUCTURAL GEOLOGY, EARTH CRUST MOVEMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1986/1228 STEP NO--UR/0210/70/000/002/0064/0071

CIRC ACCESSION NO--AP0103116

UNCLASSIFIED

USSR

KIBIN, I. N., et al., Izvestiya VUZ, Chernaya Metallurgiya, No 9, 1973, pp 159-161

they have selected the optimal modes and saturated compositions that allow them to produce titanium-plated films, 40-150 micrometers thick with a titanium content up to 70-80 percent. The article contains 4 illustrations and 5 bibliographic references.

2/2

USSR UDC 669.18:621.785.53

KIBIN, I. N., ANDRYUSHECHKIN, V. I., ARGUN'KINA, S. S., and MINCHEVA, V. R., Moscow Institute of Steel and Alloys

"Titanium Plating of Iron and Steel by Rapid Heating"

Moscow, Izvestiya VUZ, Chernaya Metallurgiya, No 9, 1973, pp 159-161

Abstract: The authors have investigated and developed conditions and modes for titanium plating which allow them to produce, in a short period of time, high-quality diffusion films with a titanium content greater than 30 percent. The investigations were conducted on samples of armco-iron and steel No 20 in the temperature range from 950 to 1200 degrees C with a holding time on the isotherm from 1 to 15 minutes. The saturated samples were subjected to metallographic, x-ray phase, and micro x-ray spectral analyses. The authors investigated the change in H_μ and the microthermal emf with depth of the diffusion film. As a result

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USSR

UDC: 533.6.011

AFONINA, N. Ye., GROMOV, V. G.

"Investigation of Supersonic Flow of a Mixture Containing Carbon Dioxide Around Solids"

V sb. Nauch. konf. In-t mekh. Mosk. un-ta, Moskva, 22-24 maya 1972 g. Tezisy dokl. (Scientific Conference. Institute of Mechanics, Moscow University, Moscow, 22-24 May 1972. Abstracts of Papers), Moscow, 1972, p 6 (from RZh-Mekhanika, No 9, Sep 72, Abstract No 9B461)

Translation: The paper presents the results of calculation of viscous flow of a CO_2-N_2 gas mixture close to the critical stream line at Reynolds numbers from $10^{2.5}$ to $10^{5.5}$. The calculation is based on a system of equations which are a monomial approximation of a complete system of Navier-Stokes equations. This approximation is found by the "truncated series" method.

1/1

Nickel

UDC 621.77.04:669.14.001.6

USSR

TEYMER, D. A., MARKIN, V. G., AFONINA, V. M., and RYBAKOV, P. P.

"Manufacture of Thin Strip of High-Purity Nickel-Molybdenum Alloy"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 233-237

Translation: A technology of melting is developed, providing production of NIMO-20A nickel-molybdenum alloy of high purity (as concerns content of impurities and gases). It is established that the most favorable technology is deoxidation of the liquid bath with carbon alone. A technology is developed for production of cold rolled strip 0.010-0.015 mm thick of NIMO-20A alloy. 1 figure; 1 table.

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2/2 019 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0114513

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH THE PURPOSE OF JUDGING ABOUT THE REPRESENTATIVITY OF A GLOBAL PRESENTATION OF THE FIELD OF POLAR MAGNETIC DISTURBANCE IN THE FORM OF AN EQUIVALENT CURRENT SYSTEM OF ONE TYPE OR ANOTHER, THE PAPER INVESTIGATES THE DIRECTION OF THE DISTURBED VECTOR AT PHI SIMILAR TO 70DEGREES AT 20-22 LT AND PHI SIMILAR TO 75DEGREES AT 09-10 LT, AS WELL AS THE CHARACTER OF THE VECTOR ROTATION WHILE PASSING FROM A POSITIVE BAY LIKE DISTURBANCE TO A NEGATIVE ONE IN WINTER. THE DIRECTION OF THE FIELD VECTOR ALONG THE MERIDIAN TOWARDS THE EQUATOR AT 20-22 LT AT PHI SIMILAR TO 70DEGREES AND AT 09-10 LT AT PHI SIMILAR TO 75DEGREES, THE TENDENCY TO CLOCKWISE ORTATION AT PHI SIMILAR TO 65DEGREES AT EVENING HOURS DURING DP DISTURBANCES ALLOW TO MAKE CONCLUSION ABOUT A BETTER AGREEMENT OF THE OBSERVATIONS OF THE CURRENT SYSTEM, GIVEN IN FIG. 1.8., WITH THE DATA. THE WESTERN ELECTROJET IS LOCATED WITHIN THE OVAL ZONE OF AURORAE, THE WIDTH OF THE ELECTROJET INCREASES TOWARDS THE MORNING AND EVENING HOURS. THE CURRENT IN THE EAR POLAR REGION IS A CONSEQUENCE OF THE CLOSING OF THE PART OF THE CURRENT FROM THE WESTERN ELECTROJET. THE WESTERN ELECTROJET IS CLOSED MAINLY THROUGH MIDDLE LATITUDES.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--020CT70

TITLE--GEOMAGNETIC DAYS, THEIR INTENSITY AND FREQUENCY OF APPEARANCE -U-

AUTHOR-(02)-AFONINA, R.G., FELDSHTEYN, YA.I.

COUNTRY OF INFO--USSR

SOURCE--TRUDY IV, POLYARNYYE SIYANIYA, 1970, NR 19, PP 61-71

DATE PUBLISHED-------70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--GEOMAGNETIC DISTURBANCE, POLAR AREA, GEOMAGNETIC FIELD, VECTOR, AURORA, MAGNETIC FIELD INTENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0117 STEP NO--UR/3307/70/000/019/0061/0071

CIRC ACCESSION NO--AP0114513

UNCLASSIFIED

2/2 031 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AA0109752

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMOCOMPENSATION ALLOY CONSISTS OF NI 0.5-3, SI 0.5-3, B 0.01-0.1PERCENT, AND SN THE REMAINDER.

UNCLASSIFIED

1/2 031 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--TEMPERATURE COMPENSATING ALLOY -U-

AUTHOR-(05)-AFONINA, L.G., FIRSOV, A.M., DEYANOVA, S.V., VAKHRAMEYEV, V.I., FARMAKOVSKIY, B.V.

COUNTRY OF INFO--USSR

A

SOURCE--U.S.S.R. 260, 892

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--06JAN70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METALLURGIC PATENT, TIN ALLOY, NICKEL, SILICON, BORON, ALLOY COMPOSITION, THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/1791 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0109752

UNCLASSIFIED

USSR UDC: 621.315.3

FARMAKOVSKIY, B. V., AFONIKA, L. G., VAKHRAMEYEV, V. I., LEYANOVA, S. V., KRASIK, N. Ya., PIRSOV, A. M.

"Thermoresistive Cast Microwires in Glass Insulation"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 77-82 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V416)

Translation: The authors present the technological properties of thermoresistive alloys and the results of an investigation of the properties of microwires made from resistive alloy based on nickel with a temperature coefficient of resistance of $(5-6)\cdot10^{-3}$%/deg. Resumé.

1/1

Semiconductors and Transistors

USSR

UDC: 537.533.8

AFONINA, L. E., KLIMIN, A. I., STUCHINSKIY, G. B.

"Secondary Electron Emitter Based on Gallium Arsenide With Reduced Electron Affinity"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektronnoluch. i fotoelektr. pribory (Electronic Technology. Scientific and Technical Collection. Electron Beam and Photoelectric Devices), 1970, vyp. 4(18), pp 64-65 (from Ref. Zh.-Elektronika i yeye Primeneniye, No 6, Jun 71, Abstract No 6A195)

Translation: A zinc-doped GaAs crystal with carrier concentration of $1.5 \cdot 10^{19}$/cc was cut along face [110] in a vacuum of $\sim 5 \cdot 10^{-9}$ mm Hg. In the process of subsequent treatment of the cut surface in cesium vapor and in oxygen admitted up to a pressure of $2\text{-}3 \cdot 10^{-7}$ mm Hg, the value of the coefficient of secondary electron emission σ was continually observed for a primary electron energy E_p= 900 eV. The greatest value determined for σ was 47. A curve is given for $\sigma(E_p)$ determined after sealing off the cesium source (when E_p = 200 eV, $\sigma \leq 15$, when E_p = 900 eV, σ = 40, when E_p = 1600 eV, σ = 60). The results are compared with published data (see IEEE Trans. Nucl. Sci., 1968, 15, No 3, p 167) on GaP. One illustration, bibliography of three titles. N. S.

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USSR

UDC: 53.07/08+53.001.89.

AFONIN, Yu. V., PONOMARENKO, A. G., SOLOUKHIN, R. I., and KHAPOV, Yu. I.

"Compact Electron Pulse Accelerator With Independent Power Supply"

Moscow, Pribory i Tekhnika Eksperimenta, No 5, 1973, pp 20-22

Abstract: Research in CO_2 ionization lasers under high pressure and plasma experiments for modeling conditions of accelerated particle generation in solar or terrestrial plasmas require high-powered electron pulse sources. The device described in this paper has been designed for such research, has small dimensions and an independent power supply, and can be remotely controlled, thus rendering it convenient for use under space conditions. The basic circuit of the electron accelerator is given, together with a block diagram of the power supply and remote control system. Pulse power of the electron accelerator is $4 \cdot 10^8$ watts, and the coefficient for the conversion of the electric field energy into electron-beam kinetic energy is 25%. The authors express their gratitude to V. A. Kornilov and B. V. Kulikov for their assistance with the design of the instrument.
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2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138886

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FORMULA BY CRAMERS IS COR. FOR THE CALCN. OF THE SPECTRUM OF BREMSSTRAHLUNG. THE DERIVED FORMULA IS THE CORRECTION FOR DISPERSION AND ABSORPTION OF ELECTRONS OF BREMSSTRAHLUNG IN AN ANODE. THE CALCN. OF CORRECTION COEFF. IS BASED ON THE IDEA OF TWO STREAMS OF ELECTRONS IN THE ANODE, ONE IS DIRECT MOVEMENT AND THE SECOND REVERSED. BY SUING THE COR. FORMULA THE INTENSITY WAS CALCD. OF BREMSSTRAHLUNG FOR AL, CU, MO, AG, AND W ANODES. THE RESULTS ARE COMPARED WITH EXPTL. DATA. GOOD AGREEMENT WAS FOUND IN THE LONGWAVE SPECTRAL REGION. FACIILITY: INST. GEOKHIM., IRKUTSK, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--CACLUATION OF THE INTENSITY OF BREMSSTRAHLUNG FOR X RAY TUBES -U-

AUTHOR-(05)-AFONIN, V.P., LOSEV, N.F., PAVLINSKIY, G.V., GUNICHEVA, T.N., REVENKO, A.G.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(4), 431-4

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--BREMSSTRAHLUNG, X RAY, SPECTRUM, RADIATION INTENSITY

PROXY REEL/FRAME--3008/2032 STEP NO--UR/0032/70/036/004/0431/0434

CIRC ACCESSION NO--AP0138886

UNCLASSIFIED

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